

REMARKS

Claims 1-9 are pending in this application. By this Amendment, claims 1 and 9 are amended. No new matter is added. Support for these changes may be found, for example, in paragraphs [0047]-[0065] and Figs. 4 -6.

Claims 1-5 and 8-9 stand rejected under 35 U.S.C. §102(b) over Lowrey et al., U.S. Patent No. 5,205,770. This rejection is respectfully traversed.

Claims 1 and 9, each recite, in pertinent part:

forming a plurality of columnar spacers ...on a surface of a substrate...;
subsequently forming a coating material film... on the surface of the substrate
on which the plurality of columnar spacers are formed...; and
subsequently polishing the protruded heads of the columnar spacers.

The Office Action asserts that Lowrey teaches columnar spacers (18') formed on a surface of a substrate (16) and a coating material film (mold 19) formed on the surface of the substrate. (*See* Office Action , page 2.) Applicants respectfully disagree that Lowrey teaches or suggests a first feature in which the columnar spacers are formed on the surface of a substrate. Using the Office Actions' construction of Lowrey's features, the alleged coating material is made first (i.e., the mold 19 is first made) and then, the columnar spacers are formed by filling the mold with the support material 18'. Once the support material 18' is formed into the spacer structure 18, the spacer structure is "attached" to one of the electrode plates 16 or 21 (i.e., the alleged substrate.) (*See* Lowrey, column 5, lines 37-53.) Therefore, Lowrey fails to teach or suggest forming columnar spacers first and subsequently forming the coating material. In addition, Lowrey fails to teach or suggest forming columnar spacers on a substrate. Lowrey's mold 19 never touches the electrode plate 16, and therefore, the alleged coating material cannot be said to be formed on the surface of the substrate.

Claims 1 and 9 also recite in the second feature of "subsequently forming a coating material film" that the coating material is formed "on the surface of the substrate on which the

plurality of columnar spacers are formed, so that the heads of the columnar spacers protrude above the flat upper surface of the coating material film but do not extend over the coating material film."

Lowrey, Figs. 1-4 teach a support material 18' that fills the mold 19 to form a vertical section and horizontal section. As shown in Fig. 3, the horizontal section of the support material 18' does not protrude from either the mold 19 or the laminating material 21, but instead, overlays or extends over the mold or laminating material. Therefore, Lowrey fails to teach or suggest a process in which the heads of the columnar spacers protrude above the flat upper surface of the coating material film but do not extend over the coating material film.

Moreover, Lowrey teaches that one step of the spacer forming process is to use chemical mechanical planarization to remove the excess support material 18' (i.e., the horizontal section) and the laminating material 21. (See Fig. 4 and column 4, lines 52-61.) Therefore, Lowrey teaches that the entire surface of the support material 18' is removed, including the horizontal portion of the support material 18' that extends over the laminating material 21. As such, the Lowrey's process does not involve "polishing the protruded heads of the columnar spacers using the surface of the coating material film as a reference until the top faces of the columnar spacers are flush with the flat upper surface of the coating material film" as recited in claims 1 and 9.

For at least these reasons, Lowrey fails to teach or suggest all claimed features of independent claims 1 and 9. Withdrawal of the 35 U.S.C. §102(e) rejection of claims 1-5 and 8-9 is respectfully requested.

Claims 6 and 7 stand rejected under 35 U.S.C. §103(a) over Lowrey in view of Takahashi et al., U.S. Patent No. 5,336,585. This rejection is respectfully traversed.

As noted above, Lowrey fails to teach or suggest several features of independent claims 1 and 9. The addition of Takahashi does not cure the deficiency of Lowrey.

Therefore, a prima facie case of obviousness has not been shown. Accordingly, withdrawal of the 35 U.S.C. §103(a) rejection of claims 6 and 7 is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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